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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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			EXAMINER MEJIA, ANTHONY	
			ART UNIT 2451	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/725,298

Applicant(s)

POPESCU ET AL.

Examiner

ANTHONY MEJIA

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-5, 7-10, 21-24, and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6 and 11-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Claims 3-5, 7-10, 21-24, and 27-28 are pending in the instant application. Claims 1-2, and 25-26 are currently amended. Claims 6 and 11-20 have been canceled.
2. Amendment to Claim 25 in response to examiner's objection has been considered. The amendment obviates previously raised objection, as such this objection hereby withdrawn.

Response to Arguments

3. Applicant's arguments at pages 6-13 of remarks dated 02 July 2009 regarding the rejection of Claims 1-5, 7-10, and 21-28 under 35 U.S.C. 103 (a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection are made in view of the newly discovered references (*see* Office Action below).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harmer ("Mobile Aware Multimedia Applications for UMTS: the ACTS On The

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Move Project") in further view of Kamei et al. ("Community Organizer: Supporting the Formation of Network Communities through Spatial Representation") (referred herein after as Kamei) and in further view of George et al. (US 6.994,645) (referred herein after as George).

Regarding Claim 1, Harmer teaches a method comprising the steps of:
obtaining a user's communication interest (see page 540, left-hand column, lines 30-33).

obtaining network attributes (see page 540, left-hand column, lines 39 to right-hand column, lines 2);

obtaining application attributes (see page 540, left-hand column, lines 33-36);

forming a data structure single feature vector based on the communication interest, network attributes, and application attributes (implicit in the fact that these 3 obtained attributes are used and managed by a single manager, see the second line in Table 1).

Harmer does not explicitly teach wherein the data structure formed is a single feature vector; nor

wherein the single feature vector is used to cluster the user with one or more other users based on similarly-formed single feature vectors associated with one or more other users.

However, Kamei in a similar field of endeavor discloses a Community Organizer system designed to support network communities by providing spatial

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representations of community members and communication exchanged among these members including the steps of:

forming a single feature vector for a community of different interests for different users. (abstract, Introduction 1, 4.1 Retrieving information based on user's interests), and

wherein the single feature vector is used to cluster the user with one or more other users based on similarly-formed single feature vectors associated with one or more other users (abstract, Introduction 1, 4.1 Retrieving information based on user's interests).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the common practiced teachings of Kamei in the teachings of Harmer to manipulate the obtained communication interests, network attributes, and application attributes in a single feature vector in order to find other users that have similar feature vectors in a multi-dimensional space. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings of Harmer/Kamei to help users find other users who share similar interests as them on a given network.

In further, although the combined teachings of Harmer and Kamei teach the steps of obtaining user communication interest as discussed above. The combined teachings of Harmer and Kamei do not explicitly teach:

wherein the communication interest is represented by at least one of: **a user request for a content update or a user subscription to a specific data item or to a set of proximal data sources.**

However, George in a similar field of discloses a method and system for customizing electronic communications including wherein a communication interest of a user is represented by a user request for content update (changing a customer's requested mailing date because new information has been loaded into the content database, col.5, lines 3-8) or user subscription (subscription) to a specific data item (newsletter), or to a set of proximal data sources (based on the demographic and public information obtained, one of ordinary skill in the art at the time the invention was made, would appreciate that a proximal data source may then be located based on this obtained data), (col.3, lines 3-9, 15-31, 38-47, and col.4, lines 57-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of George in the combined teachings of Harmer and Kamei in order to properly measure the similarities of users' communications interests. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings of Harmer/Kamei and George to enrich the interaction between the participants (e.g., vendors/users) of the system (George: col.5, lines 16-19).

7. Claims 2, 7, 9, 22, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solotorevsky et al. (WO 03/043253) (referred herein after as Solotorevsky) in further view of George and in further view of Centintemal et al. ("Self-Adaptive User Profiles for Large-Scale Data Delivery) (referred herein after as Centintemal).

Regarding Claim 2, Solotorevsky teaches a method comprising the steps of:

obtaining network attributes from a network having a plurality of nodes (see page 20, lines 17 to 21); and

obtaining application attributes of an application (see page 20, line 22 to page 21, line 4, specifically points (2) and (4)).

Solotorevsky does not explicitly teach the step of:

obtaining user communication interests represented by at least one of: a user request for a content update or a user subscription to a specific data item or to a set of proximal data sources.

However, George in a similar field of discloses a method and system for customizing electronic communications including wherein a communication interest of a user is represented by a user request for content update (changing a customer's requested mailing date because new information has been loaded into the content database, col.5, lines 3-8) or user subscription (subscription) to a specific data item (newsletter), or to a set of proximal data sources (based on the demographic and public information obtained, one of ordinary skill in the art at the time the invention was made, would appreciate that a proximal data source may then be located based on this obtained data), (col.3, lines 3-9, 15-31, 38-47, and col.4, lines 57-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of George in the teachings of Solotorevsky in order to properly measure the similarities of users' communications interests. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings of Solotorevsky/George to enrich the interaction between the participants (e.g., vendors/users) of the system (George: col.5, lines 16-19).

The combined teachings of Solotorevsky and George do not explicitly teach the steps of:

forming a plurality of feature vectors, one for each of the plurality of nodes, where each single one of the plurality of feature vectors is based on the user's communication interest, network attributes, and application attributes.

However, Centintemal in a similar field of endeavor discloses an incremental algorithm for constructing user profiles based on obtained user attributes including the steps of:

forming a plurality of feature vectors, one for each of the plurality of nodes, where each single one of the plurality of feature vectors (see paragraph 3.1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Centintemal in the combined teachings of Solotorevsky and George to apply a feature vector based clustering algorithm for each of the nodes with the obtained communication interests, network attributes, and application attributes. One of ordinary skill in the art at the time the invention was made would have been motivated to combine all of the

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teachings of Solotorevsky/George/ Centintemal to implement one of the several straightforward possibilities from which a person of ordinary skill in the art at the time the invention was made would select from their own technical grasp, in accordance with circumstances, without exercises of inventive skill, in order to solve the problem of clustering users who share similar interests as them on a given network.

In further, the combined teachings of Solotorevsky /George/ Centintemal teach the step of:

clustering the network nodes based on the plurality of feature vectors (see page 19, lines 16-20, see also page 20, line 17 to page 21, line 4).

Regarding Claim 7, the combined teachings of Solotorevsky/George/ Centintemal teaches the method of claim 2 as discussed above. The combined teachings of Solotorevsky /George/ Centintemal further teach the step of:

obtaining application attributes includes obtaining information regarding collaborative usage of the application (Harmer: see page 540, left-hand column, lines 33-39).

Regarding Claim 9, the combined teachings of Harmer/Kamei and George teach the method of claim 2 as discussed above, wherein the method further includes the step such that clustering is based on bandwidth constraints (Harmer: see page 540, left-hand column, lines 33-39).

Regarding Claim 22, this method claim comprises limitation(s) substantially the same, as those discussed on claim 7 above, same rationale of rejection is applicable.

Regarding Claim 24, this method claim comprises limitation(s) substantially the same, as those discussed on claim 9 above, same rationale of rejection is applicable.

Regarding Claim 26, Solotorevsky teaches a computer readable storage medium containing an executable program for clustering a multi-type vector space, where the program performs the steps of:

obtaining network attributes from a network having a plurality of nodes (see page 20, lines 17 to 21); and

obtaining application attributes of an application (see page 20, line 22 to page 21, line 4, specifically points (2) and (4)).

Solotorevsky does not explicitly teach the step of:

obtaining user communication interests represented by at least one of: a user request for a content update or a user subscription to a specific data item or to a set of proximal data sources.

However, George in a similar field of discloses a method and system for customizing electronic communications including wherein a communication interest of a user is represented by a user request for content update (changing a

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customer's requested mailing date because new information has been loaded into the content database, col.5, lines 3-8) or user subscription (subscription) to a specific data item (newsletter), or to a set of proximal data sources (based on the demographic and public information obtained, one of ordinary skill in the art at the time the invention was made, would appreciate that a proximal data source may then be located based on this obtained data), (col.3, lines 3-9, 15-31, 38-47, and col.4, lines 57-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of George in the teachings of Solotorevsky in order to properly measure the similarities of users' communications interests. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings of Solotorevsky/George to enrich the interaction between the participants (e.g., vendors/users) of the system (George: col.5, lines 16-19).

The combined teachings of Solotorevsky and George do not explicitly teach the steps of:

forming a plurality of feature vectors, one for each of the plurality of nodes, where each single one of the plurality of feature vectors is based on the user's communication interest, network attributes, and application attributes.

However, Centintenal in a similar field of endeavor discloses an incremental algorithm for constructing user profiles based on obtained user attributes including the steps of:

forming a plurality of feature vectors, one for each of the plurality of nodes,

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where each single one of the plurality of feature vectors (see paragraph 3.1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Centintemal in the combined teachings of Solotorevsky and George to apply a feature vector based clustering algorithm for each of the nodes with the obtained communication interests, network attributes, and application attributes. One of ordinary skill in the art at the time the invention was made would have been motivated to combine all of the teachings of Solotorevsky/George/ Centintemal to implement one of the several straightforward possibilities from which a person of ordinary skill in the art at the time the invention was made would select from their own technical grasp, in accordance with circumstances, without exercises of inventive skill, in order to solve the problem of clustering users who share similar interests as them on a given network.

In further, the combined teachings of Solotorevsky /George/ Centintemal teach the step of:

clustering the network nodes based on the plurality of feature vectors (see page 19, lines 16-20, see also page 20, line 17 to page 21, line 4).

8. Claims 8 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solotorevsky in further view of George and in further view of Centintemal and in further view of Grimm et al. (US 5,828,843) (referred herein after Grimm).

Regarding Claim 8, the combined teachings of Solotorevsky/George/ Centintemal teach the method of claim 2 as discussed above. The combined teachings of Solotorevsky/George/ Centintemal do not explicitly teach the step of:

obtaining network path loss information (e.g., packet-loss rate, col.8, lines 65-66), and such that clustering is based on the path loss information (e.g., match maker will consider network path loss (packet-loss rate) as part of matching up clients, col.9, lines. 12-16).

However, Grimm in a similar field of endeavor discloses an object-oriented method for matching clients together with servers according to attributes included in joint request including the step for:

obtaining network path loss information (e.g., packet-loss rate, col.8, lines 65-66), and such that clustering is based on the path loss information (e.g., match maker will consider network path loss (packet-loss rate) as part of matching up clients, col.9, lines 12-16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Grimm in the combined teachings of Solotorevsky/George/ Centintemal to obtain network path loss information and to cluster clients based on this information. One of ordinary skill in the art at the time the invention was made would have been motivated to combine all of the teachings of Solotorevsky/George/ Centintemal/Grimm to help optimize the

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functionalities of collaborative applications according to obtained network attributes on the system.

Regarding Claim 23, this method claim comprises limitation(s) substantially the same, as those discussed on claim 8 above, same rationale of rejection is applicable.

9. Claims 3-4, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solotorevsky in further view of George and in further view of Centintemal and yet in further view of Johnson (US. 6,078,946) (referred herein after as Johnson)

Regarding Claim 3, the combined teachings of Solotorevsky /George/Centintemal teach the method of claim 2 as discussed above. The combined teachings of Solotorevsky /George/ Centintemal do not explicitly teach clustering that is performed by a fusion method in which one or more plurality of nodes are clustered in each attribute space on subspace classifiers.

However Johnson, in a similar field of endeavor, teaches a system and method for management of connection oriented networks including the step of:

clustering that is performed by a fusion method (where a fusion method is interpreted as being a subspace classification) in which one or more of said pluralities of nodes are clustered in each attribute space on subspace classifiers (col.10, lines 14-16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Johnson in Solotorevsky /George/

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Centintemal in order to consider additional sub-attributes. One of the ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings of both Johnson and Solotorevsky /George/ Centintemal to produce effective mutually dependent outcomes of the attributes used for the communication in the network.

Regarding Claim 4, the combined teachings of Solotorevsky /George/ Centintemal teach the method of claim 2 as discussed above. The combined teachings of Solotorevsky /George/ Centintemal do not explicitly teach wherein the method further includes the step wherein one of more plurality of said plurality of nodes clustering is performed by a nested method in which network nodes are initially clustered based on a sub-set of attributes and then re-clustered by iteratively considering additional attributes.

However Johnson, in a similar field of endeavor, teaches a system and method for management of connection oriented networks including the step of:

clustering is performed by a nested method in which network nodes are initially clustered based on a sub-set of attributes and then re-clustered by iteratively considering additional attributes (Johnson: e.g., the sub-classes are already nested within classes, but the comparison of the sub-classes will be considered as an aspect of determination of the best classes, which would include their attributes, col.10, lines 20-24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Johnson in the teachings of

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Solotorevsky /George/ Centintemal in order to implement additional attributes need for clustering. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings of Johnson/ Solotorevsky /George/ Centintemal to help optimize the interaction between the participants of the system by implementing the additional clustering within the cluster to determine the best case for the participants of the system.

Regarding Claim 27, this computer readable storage medium claim comprises limitation(s) substantially the same, as those discussed on claim 3 above, same rationale of rejection is applicable.

Regarding Claim 28, this computer readable storage medium claim comprises limitation(s) substantially the same, as those discussed on claim 4 above, same rationale of rejection is applicable.

10. Claims 5, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solotorevsky in further view of George and in further view of Centintemal in further view of George and in further view of Centintemal and yet in further view of Solotorevsky (US 2005/0010571) (referred herein after as Solotorevsky 2)

Regarding Claim 5, the combined teachings of Solotorevsky /George/ Centintemal teach the method of claim 2 as discussed above. The combined

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teachings of Solotorevsky /George/ Centintenal do not explicitly teach wherein the method comprises the steps of forming network delay maps and on the forward capacity maps from the obtained network attributes, and such that clustering is based on the formed network delay maps and on forward capacity maps.

However, Solotorevsky 2, in a similar field of endeavor, such as a system and method for generating policies for a communication network, discloses wherein further comprising forming forward capacity maps (e.g., maps calculated requirements such as forward capacity (e.g., bandwidth capacity) in a graphical representation of the network, par [0056], as demonstrated in fig.3 and network delay maps (e.g., delay, if is a network requirement that is calculated, may also be demonstrated in a graphical representation of the network as discussed in par [0060]), such that clustering is based on the formed network delay maps and on forward capacity maps (e.g., for each expected network requirement, each expected network requirement may be mapped to the elements of the symbolic network representation and its probability to demand the type of use it needs may be derived from (e.g., delay and bandwidth capacity), par [0060]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Solotorevsky 2 in Solotorevsky /George/ Centintenal to be able to have a symbolic representation of the constraints on the network. One of the ordinary skill in the art at the time the invention was made, would have been motivated to combine the teachings of Solotorevsky /George/ Centintenal and Solotorevsky 2 to be able to visually

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analyze a network map based on the specific network attributes and constraints that were obtained.

Regarding Claim 21, this method claim comprises limitation(s) substantially the same, as those discussed on claim 5 above, same rationale of rejection is applicable.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Solotorevsky in further view of George and in further view of Centintemal, and yet in further view of Tang et al. (US 2005/0076137) (referred herein after as Tang)

Regarding Claim 10, the combined teachings of Solotorevsky /George/ Centintemal teach the method of claim 2 as described above. The combined teachings of Solotorevsky /George/ Centintemal do not explicitly teach wherein the method further comprises the step of clustering is based on weighted distance function modeled from normalized attribute subspace metrics.

However, Tang, in a similar field of endeavor, teaches a method of utilizing proximity information in an overlay network, including wherein the method further comprises the step of:

clustering is based on weighted distance function (e.g., RTT) modeled from normalized attribute subspace metrics (par [0058]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Tang in Solotorevsky /George/

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Centintemal, in order to be able to be able to consider distance measurements. One of ordinary skill in the art at the time the invention was made, would have been motivated to combine the teachings of Solotorevsky /George/ Centintemal and Tang, to be able to determine the distance of the nodes within a network overlay.

12. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harmer in further view of Kamei in further view of George and yet in further view of Posey Jr. (US 7,184,444) (referred herein after as Posey).

Regarding Claim 25, the combined teachings of Grimm/George/Kamei teach the method of Claim 1 as described above. The combined teachings of Grimm/George/Kamei do not explicitly teach the step wherein the forming comprises basing the single feature vector on one or more quality of service requirements.

However, Posey in a similar field of endeavor discloses a system and method for packet classification including the step of forming a feature vector further comprises basing the single feature vector on one or more quality of service requirements (e.g., the classification index module creates a quality of service parameter vector, col.7, lines 15-29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Posey in the combined teachings of Harmer/Kamei and George in order to satisfy Quality of Service requirements mandated by the user nodes. One of ordinary skill in the art at the time the

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invention was made would have been motivated to combine all of the teachings of Harmer/Kamei/George/Posey to help minimize system resource requirements such as network bandwidth.

Conclusion

Examiner has cited particular paragraphs, columns, and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY MEJIA whose telephone number is (571)270-3630. The examiner can normally be reached on Mon-Thur 9:30AM-8:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information

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for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A.M./
Patent Examiner, Art Unit 2451

/Salad Abdullahi/
Primary Examiner, Art Unit 2457